Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (currently amended) A data restoring method for restoring data stored in a second storage system in a storage subsystem including a first storage system and a second storage system, each of which is connected to a host via a communication channel, in which the second storage system stores a copy of data to be transmitted from the first storage system, wherein

the first storage system processes an I/O request from the host, and as a result of I/O processing of the second storage system, transmits updated data according to said I/O request,

the second storage system retains data received from the first storage system as update log data, and

the host transmits a command for settling a state of an application to the first storage system as data, the first storage system transmits the data to the second storage system, and the host and the second storage system both retain an identifier corresponding to the command, and relate the identifier to the log data whereby the host designates the identifier at any given time to thereby restore data at any given time by the second storage system.

2. (original) The data restoring method according to Claim 1, wherein the host issues an I/O instruction of an identifier to the second storage system at a remote site.

3. (original) The data restoring method according to Claim 1, wherein the second storage system at a remote site receives the I/O instruction of an identifier of the host, and relates the update log of data to the identifier to store it in a storage unit.

4. (currently amended) <u>A data restoring method for restoring data stored in a second storage system in a storage subsystem including a first storage system and a second storage system, each of which is connected to a host via a communication channel, in which the second storage system stores a copy of data to be transmitted from the first storage system, wherein</u>

    <u>the first storage system processes an I/O request from the host, and as a result of I/O processing of the second storage system, transmits updated data,</u>

    <u>the second storage system retains data received from the first storage system as update log data, and</u>

    <u>the host transmits a command for settling a state of an application to the first storage system as data, the first storage system transmits the data to the second storage system, and the host and the second storage system both retain an identifier corresponding to the command, and relate the identifier to the log data whereby the host designates the identifier at any given time to thereby restore data at any given time by the second storage system</u>~~The data restoring method according to Claim 1~~,

wherein if when restoring data stored in the second storage system to its original state, an identifier which coincides with the identifier which has been transmitted from the host and received is retrieved and the target identifier is searched for, the data is restored in a source storage unit to its original state through

3

the use of data stored in a target storage unit and content of the log data recorded prior to the log data related to the coincided identifier.

5. (currently amended) A data restoring method for restoring data stored in a second storage system in a storage subsystem including a first storage system and a second storage system, each of which is connected to a host via a communication channel, in which the second storage system stores a copy of data to be transmitted from the first storage system, wherein

the first storage system processes an I/O request from the host, and as a result of I/O processing of the second storage system, transmits updated data,

the second storage system retains data received from the first storage system as update log data, and

the host transmits a command for settling a state of an application to the first storage system as data, the first storage system transmits the data to the second storage system, and the host and the second storage system both retain an identifier corresponding to the command, and relate the identifier to the log data whereby the host designates the identifier at any given time to thereby restore data at any given time by the second storage system~~The data restoring method according to Claim 1~~,

wherein on receipt of an acquisition commencement command of log data and a command for suspending pair duplex of the storage unit from the host, the first storage system confirms a storage unit located in the second storage system which is in the pair duplex to suspend the pair duplex.

6. (currently amended) A data restoring method for restoring data stored in a second storage system in a storage subsystem including a first storage system and

4

a second storage system, each of which is connected to a host via a communication channel, in which the second storage system stores a copy of data to be transmitted from the first storage system, wherein

the first storage system processes an I/O request from the host, and as a result of I/O processing of the second storage system, transmits updated data,

the second storage system retains data received from the first storage system as update log data, and

the host transmits a command for settling a state of an application to the first storage system as data, the first storage system transmits the data to the second storage system, and the host and the second storage system both retain an identifier corresponding to the command, and relate the identifier to the log data whereby the host designates the identifier at any given time to thereby restore data at any given time by the second storage system~~The data restoring method according to Claim 1~~,

wherein on receipt of a mark command issued by the host, the second storage system confirms a storage unit which acquires the log data, and sets correspondence of a mark ID and mark data, including a timer value, to the log data acquired.

7. (previously presented) A data processing method for processing data to be stored in a storage unit in a computer system including a storage system equipped with the storage unit connected to a host through a network, wherein the host performs the steps of:

requesting the storage system to create and save a copy of data which has been stored in the storage unit;

requesting the storage system to record an update portion of data due to processing of the host; and

transmitting to the storage system identification information for identifying a state of the computer system at any given time, and

the storage system performs the steps of:

creating and saving a copy of data of the storage unit in response to a request of the host;

saving, when content of the storage unit has been updated, data prior to and subsequent to the update and information indicating a place of update as log data;

retaining identification information to be transmitted from the host; and

relating the log data to the identification information.

8. (original) The data processing method according to Claim 7, wherein when storing the content stored in the storage unit to a state at any given time, the host designates state identification information to transmit a request for restoring the data to the storage system, and

the storage system discriminates the identification information received and restores the data through the use of a copy of the data and the log data.

9. (original) The data processing method according to Claim 8, wherein the identification information that the host and the storage system have in common is managed by the storage system by relating the identification information to update history, and data stored in the storage unit up to update history indicated by specific identification information is restored in response to an instruction from the host.

10. (original) The data processing method according to Claim 8, wherein the log data includes at least an entry for a mark flag indicating whether or not it is specific identification information, an entry for identification information of a log, an entry for a timer value indicating a time period during which the log has been acquired, and an entry which becomes a data area, and

when the mark flag indicates the specific identification information, the entry of the data area is defined as at least an entry of mark identification information and an entry for a timer value indicating a time period during which the mark has been imparted.

11. (original) The data processing method according to Claim 10, wherein on executing a program, when a file is closed, or when the file is saved, the host generates a specific command for relating the log data to the identification information to transmit it to the storage system, and the storage system executes the command, sets the mark flag to a specific state, and retains, in the storage unit, log data in which mark identification information and time values have been stored in the entry.

12. (original) A storage subsystem including a first storage system and a second storage system, each of which is connected to a host via a communication channel, for storing, in the second storage system, a copy of data stored in the first storage system,

the first storage system comprising:

a storage unit having a plurality of logical storage units;

a cache memory for temporarily storing data to be inputted into or outputted from the storage unit;

a memory for storing at least management information concerning the logical storage unit, management information for defining a configuration of pair duplex between the first storage system and the second storage system and a program for processing a command from the host; and

a processor for executing the program,

the second storage system comprising:

a plurality of logical storage units, of which a certain logical storage unit stores a copy of data to be stored in a logical storage unit of the first storage system constituting a pair, and another logical storage unit comprises: a storage unit to be allocated in order to store log data generated by the first storage system; a cache memory for temporarily storing data to be inputted into or outputted from the storage unit; a memory for storing at least management information concerning the logical storage unit, management information for defining a configuration of pair duplex between the first storage system and the second storage system, management information of a log and a program for processing a command from the host; and a processor for executing the program, wherein

when content of a certain logical storage unit of the first storage system has been updated, the data thus updated and information indicating a place of update are transmitted to the second storage system as log data and stored in the logical storage unit, and management information for bringing identification information transmitted from the host into correspondence with the log data is stored in the memory.

13. (original) The data storage subsystem according to Claim 12, wherein when the log data stored in the logical storage unit in the second storage system is restored to a state at any given time, the second storage system receives a request for restoring data transmitted from the host, and restores the log data stored in the logical storage unit by referring to the management information stored in the memory concerning the identification information.

14. (original) The data storage subsystem according to Claim 12, wherein the memory of the first storage system and the memory of the second storage system have:

a storage management information table for registering correspondence between an address of the storage unit which the host is capable of identifying and a logical address within the storage unit;

a storage management information table for registering correspondence among a logical address within the storage unit, an address concerning a RAID group in which the logical storage unit has been arranged, and an address concerning a disk for forming the RAID group;

a volume configuration information table for registering volume configuration information correspondingly to a number of the logical storage unit; and

a pair management information table for registering correspondence between a number of the logical storage unit within the first storage system for constituting a pair and a number of the logical storage unit within the second storage system.

15 (original) The data storage subsystem according to Claim 14, wherein at least the second storage system has:

9

a log volume group information table which registers management information

concerning a logical storage unit within the log volume group for each log volume

group;

a log ID management information table for bringing a log ID to be imparted

when the log data is stored in the logical storage unit into correspondence to a timer

value when the log data has been acquired to register as management information;

and

a mark ID management information table for bringing identification information

to be imparted when the log data is stored in the logical storage unit, which has been

transmitted from the host, into correspondence to a timer value when the log data is

stored to register as management information.

16. (original) The data storage subsystem according to Claim 12, wherein in

the first storage system, the command processing program processes a command to

be transmitted from the host, and when the command is a mark command, creates

log data and performs processing for imparting the identification information, and

in the case of an I/O processing command, the command processing program

determines a hit or a miss-hit of the cache memory, writes write data in the cache

memory, or reads out read data from the cache memory.

17. (original) The data storage subsystem according to Claim 12, wherein on

receipt of the mark command issued by the host, the second storage system

confirms a storage unit which acquires the log data, and sets correspondence

between the log data thus acquired and mark ID and mark data including timer

values.

18. (original) A storage system for storing, in a second storage system, a copy of data to be stored in a first storage system to be connected to a host via a communication channel, having:

a plurality of logical storage units, of which a certain logical storage unit stores a copy of data to be stored in a logical storage unit of the first storage system constituting a pair, and another logical storage unit comprises: a storage unit to be allocated in order to store log data generated by the first storage system; a cache memory for temporarily storing data to be inputted into or outputted from the storage unit; a memory for storing at least management information concerning the logical storage unit, management information for defining a configuration of pair duplex between the first storage system and the second storage system, management information of a log and a program for processing a command from the host; and a processor for executing the program, wherein

when content of a certain logical storage unit of the first storage system has been updated, the data thus updated and information indicating a place of update are transmitted to the second storage system as log data and stored in the logical storage unit, and management information for bringing identification information transmitted from the host into correspondence with the log data is stored in the memory.

19. (original) The storage system according to Claim 18, wherein when the log data stored in the logical storage unit is restored to a state at any given time, the second storage system receives a request for restoring data transmitted from the host, and restores the log data stored in the logical storage unit by referring to the

management information stored in the memory concerning the identification information.

20. (original) A storage subsystem including a first storage system and a second storage system, each of which is connected to a host via a communication channel, for storing, in the second storage system, a copy of data stored in the first storage system,

the first storage system comprising:

a storage unit having a plurality of logical storage units;

a cache memory for temporarily storing data to be inputted into or outputted from the storage unit;

a memory for storing at least management information concerning the logical storage unit, management information for defining a configuration of pair duplex between the first storage system and the second storage system and a program for processing a command from the host; and

a processor for executing the program, wherein

the command processing program processes a command to be transmitted from the host, and when the command is a mark command, creates log data and performs processing for imparting identification information, and

in the case of an I/O processing command, the command processing program determines a hit or a miss-hit of the cache memory, writes write data in the cache memory, or reads out read data from the cache memory,

the second storage system comprising:

a plurality of logical storage units, of which a certain logical storage unit stores a copy of data to be stored in a logical storage unit of the first storage system

12

constituting a pair, and another logical storage unit comprises: a storage unit to be allocated in order to store log data generated by the first storage system; a cache memory for temporarily storing data to be inputted into or outputted from the storage unit; a memory for storing at least management information concerning the logical storage unit, management information for defining a configuration of pair duplex between the first storage system and the second storage system, management information of a log and a program for processing a command from the host; and a processor for executing the program, wherein

when content of a certain logical storage unit of the first storage system has been updated, the data thus updated and information indicating place of update are transmitted to the second storage system as log data and stored in the logical storage unit, and management information for bringing identification information transmitted from the host into correspondence with the log data is stored in the memory,

on receipt of an acquisition commencement command of log data and a command for suspending the pair duplex of the storage unit from the host, the first storage system confirms a storage unit located in the second storage system which is in the pair duplex to suspend the pair duplex,

when the log data stored in the logical storage unit in the second storage system is restored to a state at any given time, the second storage system receives a request for restoring data transmitted from the host, and restores the log data stored in the logical storage unit by referring to the management information stored in the memory concerning the identification information.